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Moving Frontiers: A Local-Global Perspective

Peter Nijkamp

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Abstract

The paper addresses the position of peripheral **areas** from both a local and a global perspective. It is argued that the drive towards a network **economy** - often global in **nature** - has **far** reaching implications for the **economic** and geographical **profile** of border regions. The paper starts off **from** a theoretical perspective and shows that modern network theory - in combination with transaction **cost** theory - **may** offer a meaningful operational analytical **framework** for understanding the changing positions of regions in our world.

A **major** question is then whether the new spatial **dynamics** will lead to **convergence** or **divergence** patterns among regions. A critical overview of **convergence** theories - against the background of globalisation phenomena - is then given. It is argued that there is a tendency towards club **convergence**.

The consequences for **regional** development policy are next spelt out. There is no uniform policy **panacea**; policy strategies have to be fine-tuned and tailor-made, and should address the **specific** needs and opportunities of regions.

Finally, the position of border regions is revisited. It is argued that accessibility policies **aiming** to alleviate the negative consequences of peripheral location **deserve** priority, provided the region has **sufficient economic self-reliance** to **cope** with competition **from** outside.



1. Trends Towards a Network Economy

Traditionally, border areas are regarded as low opportunity regions. The geographical isolation of such areas causes a low competitiveness profile as a result of relatively high transportation costs and low economies of scale and density. In many countries, border areas are regarded as economic problem regions which are often supported by policy stimuli (e.g., infrastructure subsidies). A significant part of the structural funds of the EU is based on this background view.

Recently however, also many studies have been published which demonstrate the growth potential of border areas. Through their geographic position border areas may act as strategic contact and communication regions between different economies which are interlinked by means of cross-border trade and transport flows. There are several examples which show the validity of this argument, e.g. new emerging cities near the US-Mexican border, cities like Aosta and Bellinzona near the Swiss-Italian border etc. (see e.g. Ratti and Reichman 1993). In this context, the notion of an 'active contact space' has been introduced.

Apart from connectivity reasons, there are also other strategic elements which may offer border areas a competitive advantage. Especially in case of infant industries, emerging new firms may need a protective - and hence less accessible - environment to develop a market niche. Examples are the Swatch industry in the Swiss Jura or Lego in Billund (Denmark). It seems thus plausible that peripherality may also offer a temporary protective shell for specific branches of the industry.

In recent years we are witnessing drastic changes in the industrial composition and mechanisms of our world. Cities, regions and nations world-wide exhibit complex and turbulent movements induced by indigenous growth and spatial connectivity. In the past decades, structural change and differential (fast and slow) dynamics have become a dominant feature of economies at all levels, where stability is substituted for transformation. After the era of the Industrial Revolution in the second part of the last century which was marked by new ways of organising production and transport on the basis of new technological innovations favouring large-scale production, we observe in the second part of this century a new phase in the history of our developed world, viz. a Network Revolution marked by interconnected modes of production and transport on the basis of radical restructuring of logistic, informational and communicative processes favouring neo-Fordist types of production including the emergence of component industries (see Lagendijk 1993).

The changes we are observing nowadays have several important dimensions, each relating to and interacting with a number of others. Spatially, we see new trends reshaping the location of goods handling activities (and also the location of information-handling activities) between and within regions and nations, where interconnected nodes play a strategic role. Sectorally, the Network Revolution incorporates both the growth of tertiary activities, and the changing relationship and blurring differentiation between manufacturing and service industries. And finally, from an organizational perspective, new developments reflect important changes in the nature and forms of the relationship between enterprises, and the ownership and control of these enterprises, a phenomenon supported by competition and deregulation.

The recent revival of Schumpeterian views on current spatial economic restructuring phenomena has increasingly induced scientific interest in innovation and economic transfoxmation (Giersch 1984). Both the behavioural stimuli and the selection environment for the creation and adoption of technological and organizational change in firms have become a

subject of intensive scientific investigations. In this context, a **rich** field of **economic** research on spatial dynamics has recently been developed, for instance, long waves analysis, network **configurations**, technogenesis conditions, impact studies on **small** and medium sized enterprises, neo-Fordist structural approaches, labour market dynamics, and the growth potential of high technology industries. Clearly, various studies have been devoted to the seedbed conditions of new **technologies**, especially in relation to small and medium sized **firms** (Kamann and Nijkamp 1991). In this context, several new **frameworks** of analysis have been developed which have attracted **much** attention, **such** as the spatial incubator hypothesis and the spatial product life-cycle model. **In** the **same** vein, **also** **industrial dynamics** has received **much** attention in the past decade.

It is noteworthy **however**, that in the Schumpeterian view entrepreneurial innovation is not an exogenous determinant of **economic** growth but an endogenous force in a **profit maximizing** economy. Thus, the **profit** motive, which is **crucial** to survival in a **competitive** system is the **main** driving force for adopting and generating innovations and hence of cyclical **economic** patterns. Clearly, the discontinuities associated with the adoption and **diffusion** of innovations **may** lead to perturbations in a **spatial-economic** system and hence lead to sometimes unpredictable movements.

An interesting phenomenon that has recently emerged in the **economies** in **many** countries and regions is the awareness and appreciation of emergence of a **network society**. A network is a particular organization of an **economy** based on synergy via **actor** dependency and operating mainly via nodal **economic** regions connected by various modes. Especially the **rise** of the **information economy** has **caused** this new network-based **structure** in the evolution of spatial **economic** systems. **Such** networks are **also** the vehicles par **excellence** for rapid transition, **diffusion** of technological innovation, international mobility and knowledge transfer. These new networks are increasingly becoming the vehicles for competition and cooperation in the industrial sector. Organized production **and** service linkages in **dynamic niches** in networks are governing not **only** international trade (e.g., between the EU and the USA or between the EU and the Pacific Rim countries), but **•** by way of a **fractal representation •** **also** the interaction patterns between regions or cities.

In light of these developments, the present paper seeks to offer an answer to two research questions:

- which theoretical **frameworks** can be envisaged that explain the above dynamics in spatial industrial development?
- which policy lessons **can** be drawn that map out the proper responses to the above transformation **processes**?

To offer an answer to the **first** question, we will in the next **section** discuss three alternative explanatory **frameworks**, viz. the **eclectic** theory, the transaction **cost** theory and the network theory. Next, the description of a new methodological **framework** **will** be based on recent **changes** in industrial networks in a spatial setting.

2. Explanatory Analysis Frameworks

Our industrial world is in a **state** of flux. Industrial linkages have in the past decades increasingly assumed the form of internationally operating industrial networks. This has exerted a profound impact on the volume and **structure** of international trade (e.g., **containerisation**, outsourcing) and service **delivery**. In addition to **such** external network

developments, **also** the transaction costs for intermediate deliveries made up an important motive for **such changes**. The **economic** organisation of modern industries **can** essentially adopt three archetypes, viz. **market**, **hierarchy** and **networks**. A market configuration takes for granted that a **firm** has a flexible behaviour and buys its necessary **inputs** from other producers as intermediate goods on a competitive market, thus incurring high transaction costs for ad hoc contracts and less stable relationships. A hierarchy is an organisational structure **where** a **significant** part of the **firm's** industrial production is **carried out** inside the own corporation. And **finally**, a network is a sustainable organized industrial structure characterized by sets of two or more connected exchange relations between **economic** actors based on interaction and mutual linkages (Hakansson 1987).

The above mentioned **far-reaching** transformation in both the global **economy** and the regional **economies** in terms of industrial structure and organization has provoked the birth of various **explanatory frameworks**. These **frameworks** have emerged in geography, regional science, industrial economics and international trade theory. There is a wide variety of **such** new theoretical paradigms, but some major representative classes in new theoretical thinking **are** the **eclectic theory**, the **transaction cost theory** and the **network theory**. All of them serve to offer more adequate insights into the **backgrounds** and consequences of our 'Schumpeterian era' (Giersch 1984), with a **clear** emphasis on industrial **dynamics** in **space**.

The eclectic theory addresses the issue of foreign investment and trade from the viewpoint of internationalisation of international production (see Buckley 1988; Dunning 1988a, 1988b). This approach takes for granted that multinational **firms** have a certain competitive **asset** (e.g., a high quality labour force, a superior technology) which is exploited internally within the **firm's** international organisation, **rather** than using e.g., a license system. This is mainly done because of market **imperfections** and **location-specific** advantages (see Legendijk and Van der Knaap 1993). Especially the eclectic theory of Dunning has offered interesting contributions to a better understanding of international production and foreign investment. Three **main categories** of international investments are distinguished by him: localised resources which **encourage** resource-seeking investments; **markets**, which lead to profit-seeking investments (e.g., import substitution); and advantageous production **inputs** (e.g., labour) which **attract** rationalised production strategies. The **main** emphasis is thus on internationalisation of multinational **companies**. Less attention is given to transaction costs or network configurations, issues which will now be **discussed**.

Next, we will **address** the **transaction cost theory**, originally developed by Williamson (1979). The author **focuses** in particular on the choice between self production (inside the hierarchy of the **firm** itself) or farming out (via the market). A transaction **means** then essentially a contractual agreement and communication with the **external** environment. Clearly, in a complex multi-product multi-location multi-plant **firm** the number of transactions **may** be formidable. The choice for a particular form of input Channel depends then according to Williamson on the **asset specificity**, the uncertainty and the **frequency** of the transaction concerned. Based on these characteristics, the author **makes** then a typology of organisational forms of industries and their associated contract forms (so-called governance **structures**). It is thus **clear** that the transaction **cost** theory **places** most emphasis on efficiency **gains** in bilateral **contacts** and contracts between **firms**. This is of course a major limitation of this theory, as, for instance, **historical**, **political** or institutional influences are receiving relatively less attention.

Finally, **we** will focus on **network theory**. Networks are essentially an intermediate

form **between** the market and a hierarchical industrial structure (see Davidson 1995). The benefits of a network originate normally **from** a **synergy** as a **result** of a complementarity of capacities and activities. Efficiency is enhanced by a combination of both competition and cooperation inside the **network**, supported by high quality communication **and** regular interactions among interdependent partners. Thorelli (1986) and Hakkansson (1987) **empha-** **siie** in particular the long lasting structuring **effects** of a network, even though the firm's position in a network **may** change (this position is a market **asset** built up by investments in manpower, **time** and scarce **financial means**) (see **also** Hinterhuber and Levin 1994). Networks **may** also exhibit **different** forms: **vertical**, horizontal, diagonal **and** intenal, depending on the firm's intenal organisation and **competence** as well as on the external market conditions. It turns out that in **general** the motives for partners to cooperate in a network are stemming **from** efficiency increase, **information** gathering, power position and external **economies** (see Capello 1994). Thus, network theory offers a **rather** broad perspective for the behaviour of network partners, **especially** since **financial-economic** arguments as well as **strategic** considerations play a critical role.

The use of network theory has mainly **received** a path breaking stimulus due to the work of the IMP Group (**Industrial Marketing & Purchasing G-rour**), an **informal group** of scientists involved in network research in industrial **markets**. (see Axelsson and Easton 1992, Johansson and Mattsson 1991, Pfeffer and Salancik 1978 **and** Hakansson 1987).

It should be added that the more recently developed **value chain theory** (see Porter 1991) is **also** based on a network **framework** by focusing on **competitive** advantages to be achieved through the choice of strategically relevant activities of a **firm** (includiig its position in a network). In this context, **also** the firm's logistics, marketing, **R&D**, trade **channels** etc. have to be taken into consideration.

The previous **frameworks** have emphasized in particular the **strategic relevance** of efficiently operating networks among **firms** in a **competitive** environment. **Vertical** integration, horizontal integration, outsourcing **and** search for new **markets** determine the industrial **dynamics** of our world. We **will** now in the **next section** address the question whether **from** a socio-economie perspective the above mentioned **changes** in force fields will lead to spatially convergent developments. This issue is of course of particular **importance** for border areas.

3. Spatial Competitiveness and Convergence

Many peripheral and border regions have a weak **economic** structure and are **faced** with severe barriers (in terms of **infrastructure** and skilled labour force) which prevent a smooth and **effective** adjustment to the new **economic** opportunities in a globalizing network **economy**. There is no doubt that **such** regions have to improve their competitiveness in order to play a significant role in a globalizing open market **economy**. Competitiveness **means** in this context that the region has to do things better than others, **and also** that it has to do things together with others. Mobilizing and joining the indigenous regional **forces** will hence be a major challenge at the interface of the public and the private sector.

How can existing regional development initiatives be reinforced and **how** can the necessary critical mass of **mature** regional development programmes be created, if a region is still hampered by various structural bottlenecks? In general terms, one **may** argue that a **drastic** improvement of the region's **comparative** advantage is a sine qua

non. This implies in particular:

- there have to be sufficient locational advantages in terms of inexpensive (both skilled and unskilled) labour and low **real estate prices**
- private sector initiatives have to be supported by 'good governance', i.e. **non-bureaucratic**, flexible and efficient policy and management procedures (e.g., quick approval procedures, efficient customs procedures, sufficient supply of public services etc.)
- the region as a **whole** has to develop a sense of Schumpeterian **entrepreneurship** **where** new initiatives are welcomed and **where** the public sector offers support **mechanisms** for private sector developments
- the **lack** of accessibility and connectivity has to be remedied by developing a consistent new **infrastructure** policy over a long-range period which serves to **alleviate** the disadvantages originating from the peripheral character of the region.

In the present **section** we **will address** several questions related to **regional development policies**, based on a concise overview of **convergence debates** and **endogenous growth theory**.

At the outset it should be noted that 'the regional problem' is not an unambiguous concept. Regions **may** face a variety of problem situations (such as peripherality, high unemployment **rates**, high (or low) population densities, low education, inferior **infrastructure**, poor environmental conditions etc.) and **many** of these problem situations are directly or indirectly related to regional welfare levels (or **lack** of growth therein). Seen from this perspective, regions do in general not differ from nations: nations **also** exhibit persistent disparities in GDP per capita. But there is a **basic difference** with respect to regions: a system of regions is **much** more an open trade system without customs' or institutional barriers. Thus, competitiveness plays a **crucial** role in regional development. This is **once** more important, as **also** factor mobility **tends** to be **much higher** between regions, especially the **higher** skilled labour market segments. Clearly, border regions **often** face an intermediate position: the border **creates** a semi-permeable barrier, while there is an open connectivity to the central **areas**. Is it possible to turn **such** impediments into new opportunities?

Competitiveness is **often** seen as a vehicle to **cope** with 'the regional problem'. It should be added that interregional competitiveness has a **clear** spatial (geographical) dimension, as firms (or even entire regions) in a **competitive** environment **may** address different geographical **markets**, ranging from local to global. Of course, this depends largely on the type of product and the industrial organisation of the sector concerned.

In a **static competitive** market, industrial competition **means** that there will always be winners and losers, but it is important to recognise here the **difference** between absolute and relative winners (or losers). **This** is undoubtedly important in a regional **economy**, as it **often happens** that a region is growing in absolute sense (e.g., in GDP per capita), while it is losing on its market share (in relative terms). **This may** widen the welfare gaps between various regions, thus aggravating the equity problem among regions. The **basic** question then is whether **- after** an initial period of growing interregional disparities **-** in the **longer** run a **process** of spatial-economic **convergence** will start. **This** means that the regional question does not only refer to a **static** allocation problem, but **also** a **dynamic** long-range qualitative conversion phenomenon (Nijkamp

1998).

It is important to realize that regions are more sensitive to comparative advantages and **competitive** strategies of various players, and hence display **also** more severe fluctuations in **income** and employment. Following Keynesian recipes, regions tend to **generate** a relatively high output growth, if they are involved in export activities. But there are **also** other **factors** which lie at the **heart** of the **existence** of regional disparities. This **may** be understood by referring to the well-known efficiency-equity dilemma. A regional which is **lagging** behind **may** have an improper use of factor **inputs** which prohibits the achievement of a maximum output growth. This **means** that a first goal of regional development would have to be an optimum allocation of input with a view on a maximum contribution to a regional production. This efficiency goal is **often** contradicted by another policy consideration, viz. equity. Regions do not grow to the same extent, with the **consequence** that regional disparities emerge. Some of such disparities **may** be temporary in **nature** (e.g. due to market adjustments), but others are more persistent and **may** exhibit a robust pattern over **many** generations. From a policy perspective, this provokes the need to mitigate **such** interregional welfare differences, but it is **clear** that the goal of a reduction of welfare discrepancies is usually **▪** and certainly in the **short run ▪** at odds with the goal of a maximum contribution of **each** region to overall output.. This issue has recently in Europe provoked the question whether **huge** sums of public financial support would have to be given to 'lost cases', and whether the money should not have been spent otherwise, e.g. to the creation of promising opportunities.

The efficiency-equity dilemma has generated a world-wide **debate** among economists on the question of **convergence** in the medium or long run. Based on a simple neo-classical growth model, it **can** easily be demonstrated that **convergence** between regions in terms of output per capita will arise as a **result** of declining output of **capital**, a phenomenon which **may** be ascribed to declining **revenues** of capital accumulation (Armstrong and Taylor 1993). This situation would **mean** that in the long run the 'forerunners' will lose their comparative advantage and the 'backrunners' will sooner or later catch up their delay. In the economics literature the **convergence** theory has extensively been **discussed**; it has led to adjusted **concepts** such as absolute versus conditional **convergence**, or beta **convergence** versus delta **convergence** (see also Van de Klundert 1998).

Unfortunately, the empirical facts on **convergence** are not **conclusive**. There are several cases **where** within a country **convergence** has occurred, but there are **also** cases **where** persistent welfare differences continue to exist. For instance, in the EU 15 the maximum **difference** in terms of GDP per head amounts approximately to a factor 6. The **existence** of large welfare discrepancies is **also** an argument to exclude backward regions from a joint economic market (**such** as the EU).

It is interesting that in recent publications on regional growth differences, **much** attention has been given to the **effects** of globalisation which position regions in an international force field with **many** opportunities, but **also** with **many** problematic outcomes for vulnerable regional **economies** (Kohno et al. 1998).

Scientists with an optimistic perspective on globalization (usually economists) have pointed to several other positive features, in addition to an avalanche of product and **process** innovations plus the lower **costs** of communication and transportation. One of the most important is that the growth in international trade does not only lead to an

enhanced **economic** welfare for **countries** being able to exploit **comparative** advantage, but the efficiency gains from **economic** integration **may also fuel** technological progress and **scale** economies which in favourable circumstances **may** lead to permanently **higher** global growth **rates** for the winners.

In terms of equity, an advantage is that the increasing fluidity of innovation diffusion and absorption **contributes** to the **convergence** of living standards between regions or countries which share common technologies and this **convergence** is reinforced through trade and factor mobility. **Convergence** is in the standard neo-classical growth models due to diminishing returns to capital accumulation but **evidence** is now emerging that trade **can also contribute** to the catching up of the **lagging** regions and countries. This would suggest that **strategic** but **selective** openness might be beneficial to border regions.

A situation of **competitive** openness forces governments **also** to develop prudent **fiscal** and monetary **policies** and to maintain low **rates** of inflation. That the discipline of the international marketplace reduces the degrees of **freedom** in **economic** policy is **clear**, for example, **from** the political difficulties surrounding the introduction of the European Monetary Union (EMU). Finally, **rather** than being a threat, rising incomes in **huge** emerging economies **such** as China and India open up vast export opportunities for the developed world. The **main** challenge of peripheral **areas** will be to develop strategies that ensure a participation in **this** globalisation **process**.

Against the widely shared belief in the **fruits** of globalisation, there is **also** an emerging school of thought which emphasises the **costs** of globalization. Its proponents are found primarily among **protectionists**, politicians and adversely **affected** sectors. One of the most **often** heard complaints is the fear for the **adverse effects** of globalization-induced structural change. Globalization **may** have accelerated the change in sectoral composition of the **economy** in a way which has led to large adjustment **costs** for both capital and labour. In **many** developed economies this **process** has **often** taken the form of a decline in manufacturing. This development is commonly referred to as deindustrialization (or hollowization). In **such** situations are not only resources withdrawn **from** declining industries, but are **also** increasingly taken abroad in order to reap **higher rates** of return to **capital**. The **effects** of globalization on the service sectors are not unambiguously positive either, as for example the Internet **may** substitute for local intermediaries which are **real estate** agents or travel agents. Clearly, current spatial **dynamics** tend to **create** both winners and losers.

It should be added that the speed of change is **faster** than ever before which has, in **many** cases, led due to limited substitution elasticities between different types of occupations and the time-intensive **processes** of upskilling and retraining, to growing unemployment. Restructuring has **also caused** growing wage premiums for highly skilled internationally mobile people in professional and managerial occupations, while it has marginalised blue **collar** employment in traditional industries. There is therefore little dispute that globalization has for the **time** being led to growing **income** inequality, despite the national welfare gains. **Thus**, globalisation offers a **clear** case of the equity-efficiency dilemma and **will** continue to exert a significant impact.

It is **also often** argued that increasing returns in information-related industries **may** lead to a monopolisation of large enterprises in certain **areas** (e.g., **Microsoft** in the software industry) or the widespread adoption of sub-optimal technologies due to network externalities. Surprisingly, an increasingly important, opposite force is the re-

emergence of the small firm, as falling communication costs permit specialization, niche marketing and outsourcing. The global trend in the growth of small firms encourages competitiveness and innovation. The two forces of market concentration and dispersion operate at the same time and lead to a growing complexity and diversity of global market structures, with clear consequences at the local level.

The various force fields can also be depicted in a stylized - and hence illustrative way (see Figure 1), which shows different mappings of global-local configurations.

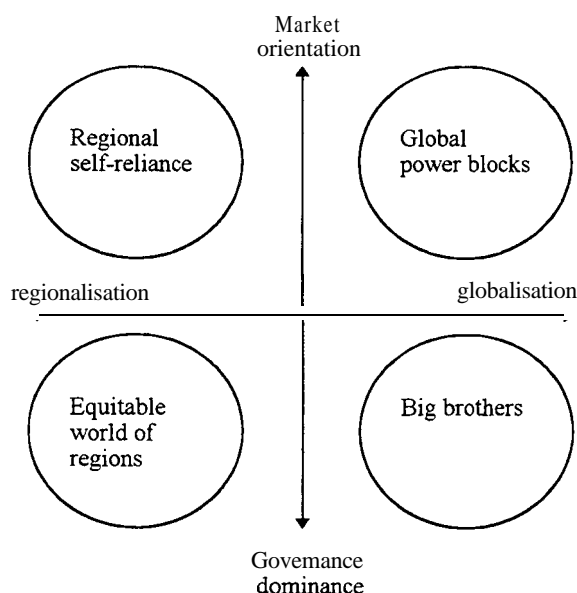


Figure 1. Force fields in the age of global and regional developments

It is now an intriguing question how the regions of the world are faring under these far-reaching global changes. It is hard to find regional islands of stability amidst the global turbulence. The pattern is extremely diverse. Some regions (e.g., California, Ile-de-France, Bavaria, Randstad Holland) have become “world regions” with a far-reaching impact on the world economy as a whole. Others have become important specialised areas providing services or manufacturing to a significant part of our world (e.g., Third Italy, the Greater London area, Silicon Valley, Tokyo Metropolitan area). And yet others have become the losers in the new competitive world economy (e.g., regions in Central and Eastern Europe, Greece, parts of Latin America). And finally, there are also peripheral regions, which due to historical or ecological advantages are booming as a result of global tourism flows (e.g., the Greek islands and the Turkish coast, the Caribbean, northern Queensland). Virtually all regions in the world seem to be in a state of transition as a result of global forces (economic, geopolitical, cultural, demographic).

The question is now whether this structural dynamics will shape more equitable conditions for individual regions. In recent years we have witnessed an increasing interest in the theory of club convergence (see e.g. Durlaug and Johnson 1995, Galor 1996, Levine and Renelt 1992, Quah 1996, Sachs 1997). The idea is that regions or countries do not move to one and the same average level, but tend to move to a series of different

welfare levels. This so-called club **convergence** has become a source of **much** research. The reason for the emergence of multiple **convergence** levels **may** be found in intervening **factors** such as institutional frameworks, climatic conditions, geographical positions etc.

It seems likely that there is a world-wide tendency towards 'clubs' of regions, so that a **convergence** of individual regions to one of these clubs seems to take **place**, which would eventually lead to a **fragmented** regional **convergence**. Although the exact **nature** of this global change and the related local-regional development cannot as yet be easily and precisely mapped **out**, it is plausible that development **prospects**, uncertainties and **interdependencies** of regions are key features. Research into the major issues, challenges and problems of the regions has only recently commenced. The regional configuration in the age of globalization appears to turn increasingly into a multi-polar spatial system, in a partly **fragmented** way (following the end of the **cold war**) and in a partly uniform way (following the diminishing of the North-South conflict). The global picture of the regions is **rather** heterogeneous. This applies of course **also** to border **areas**, but the overall empirical insight into the **nature** of the regional disparity problem is still **fragmented**. Seen **from** an empirical research perspective, we **may** argue that **systematic** data collection and **economic** monitoring at a regional **scale** is necessary to build up a reliable policy assessment and evaluation methodology. **Such** information would **also** be **helpful** to find out whether actually in border **areas** there is regional **convergence** to an **average** national level, or whether socio-economic clusters of regions are emerging which display significant welfare disparities between these region-clubs (exhibiting a pattern of forerunners and backrunners).

A **final remark** is still in order here. Besides the well-known efficiency-equity dilemma and the issue of regional **convergence**, there is **also** the need for regional sustainable development (in terms of environmental quality, **safety** and security). The goal of regional sustainable development **may** be at odds with the goals of efficiency and equity, which **once** more **may** restrict the degrees of **freedom** of a regional development policy. On the other hand, the goal of regional environmental sustainability **may** be supportive with respect to efficiency and equity, e.g. in **areas** with a high environmental quality which **may** reap the **fruits** of tourism or cultural visits. This **may** offer interesting opportunities for border regions.

4. **Needs for Regional Policies**

A major question at present is whether a public policy support would have to take the form of **income** transfer (e.g., subsidies, **fiscal mechanisms**) or whether a **fine-tuned** overhead policy (e.g., education, **infrastructure**, innovation) would have to be induced. Clearly, the regional development problem has led to a **fundamental debate** on the role of governments in regional-economic policy in the age of globalisation.

It is interesting to observe that in the **post-war** period the influence of public policy on the society and the regional and national **economy** has drastically increased. As a **result** government expenditures have significantly **risen** (absolutely and relatively), while **also** more regulatory measures have been **introduced**. **Social** security systems were, for example, largely expanded, while the government assumed **inter alia** responsibility for the financing and operation of transport **infrastructure**, education and communication.

In the past decade **however**, the societal and institutional environment in which

economic agents were used to act has **changed** dramatically. This **holds** for the public as well as the private sector: the devolution movement has induced an increased competition between companies and countries. As a **result**, a rising need for restructuring and renewal has **come** to the fore, and hence the Schumpeterian paradigm of 'creative destruction' has gained popularity. Even large companies like **IBM** and Philips appear to face problems **when** lags in renewal **cause** structural inefficiencies. The same **may** hold for countries and regions: the **economic** development of most Western-European countries and regions, for example, lags behind that of the US and the Pacific, which **may** be due to a more regulatory and **conservative** institutional environment in Europe.

The new institutional model which has arisen is a blend of competition and cooperation between actors or stakeholders. The connecting constellation is mostly made up by network configurations, with key players in the nodes of **such** a network. It is increasingly recognised that a network model **may** be an **efficient** tool for competition and **strategic** policy.

These trends apply to both the private and the public sector. World-wide, we observe **much** more cooperation between countries and between trade blocks (EU, NAFTA ASEAN), while unnecessary regulations are abolished (labour market, capital market). It has become **clear** that good governance in the public as well as the private sector **may** be of increasing importance for the **economic** development and welfare of countries, regions and their citizens. Thus, institutional reform seeking to enhance the efficiency of public (regional) authorities seems to be inevitable. This has led to interesting new forms of public-private modes of cooperation which are different from traditional views on the role of governments. Clearly, there are several standard reasons for governments to intervene in the market. They are **well documented** in the literature and **will** not be repeated here. But new institutional ramifications of public and private initiatives seem to emerge and flourish, and these need more research attention.

As a **result** of external- mainly globalisation - **forces** and of institutional reforms, it is increasingly recognized that regional development strategies are of a multi-faceted nature. There is not a single and simple recipe to solve the efficiency-equity dilemma. We will discuss here three anchor points for enhancing regional competitiveness, viz. the **regional economy**, the **industrial development** and the **entrepreneurial behaviour**.

In the history of regional-economic development policy several approaches have been **advocated** to increase regional efficiency and at the same **time** to **reduce** inter-regional disparities. The growth pole concept, for instance, has been an established policy concept in the seventies. Although this notion as a policy orientation has faded away, it has re-emerged under different **names** **such** as technopoles, innovation centres, technology districts, islands of innovation etc. The **basic** idea is that not **all** regions **can** be at the same **time** a subject of public policy, as this would be too costly and would not **create** a sufficiently large critical mass. Thus, selectivity is a sine qua non for an **efficient** regional development policy. Although some **successes** are certainly found, it turned out that the **scale** and critical mass of such initiatives was in **many** cases **insufficient**. More recently, an interest has emerged in spatial-economic corridors (e.g. the Blue Banana stretching from London via Holland and the Ruhr Area and Paris to Baden-Württemberg and North Italy and **mapping** out the Western European **economic** force field). Clearly, **such** geographical maps are imaginative and provoke political **debate** and **action**, as they reinforce the socio-economic and geographical image of an area in connection with

adjacent (cooperative and **competitive**) **areas**. In the same spirit, we **also** witness an increasing interest in **spatial-economic** networks of a trans-national **nature** (e.g., Euregions), which are **also** meant to **maximise** the benefits through cooperation of competing regions. Especially the **latter** strategy **may** be relevant for border regions.

Secondly, seen **from** an industrial development perspective, **much** attention has recently been focused on regional self-reliance, on a **much** more **active** and **self-conscious** involvement of the region and **all** its (private and public) actors. This is in line with the present decentralisation movement in **many** countries. Competitiveness is then not regarded as the **result** of a top-down support, but is preponderantly contingent **upon** the creativeness of the regional base. This has led to the idea that the regional (or local) milieu is a critical **success** factor for **any** regional development policy. Business climate is not something which **can** be imposed **upon** the region, but is a spin-off of the existing entrepreneurial spirits in the region. Clearly, **such** entrepreneurial conditions are certainly more likely to exist in larger agglomerations, but they **may also** be the **result** of **creative** entrepreneurship in even isolated **areas** (cf. e.g., Legoland or Jura). Another, increasingly important factor is the industrial organisation in a region, in particular the network configuration between industries mutually and the linkages with the public sector. This **may** lead to new clusters of regional innovation, following **also** Porter's **diamond** approach **where** communication **channels**, personal relationships, geographical proximity, and local **ties** are seen as **necessary** conditions for regional development. In addition, **policies** are based on the indigenous strength of the region, while there is **also** the need to attract foreign **capital**. Foreign Direct Investments (**FDI's**) are **often** seen as the **miraculous** vehicles for accelerated regional development. Necessary as they **may** be, it ought to be recognized that the interest of **FDI's** is in general not in the regional development as **such**, but in the exploitation of the region's **comparative** advantage for the company itself. More recently, we have **also** witnessed **successful** industrial policies focused on the creation of regional industrial networks (so-called 'filieres'), sometimes **also** with the assistance of foreign participation. The **success** story of the Third Italy is a good example of this new potential.

Finally, **from** a **micro** (entrepreneurial) viewpoint it is **clear** that regional development is **often** a matter of **SME's**, of small-scale initiatives, but if they occur in large numbers they **may** add significantly to regional growth. **Thus**, the nurturing of existing (incumbent) business life and the creation of favourable incubation conditions for new business initiations is an important regional development task. Clearly, the attraction of multinational, large-scale firms is an interesting option, but **may** make the region **also** vulnerable, as **such** companies do **often** exhibit 'nomadic' behaviour (see Bruinsma et al. 1998). This would **mean** that regional policy would have to **address** both SME and multinational activities. A proper response of **successful** companies **may** be diverse (see **also** Van Geenhuizen and Nij kamp 1998):

- ☐ a better linkage to the global **economy** by investing in the ICT sector;
- ☐ an increasing **emphasis** on **scaling** up by **fusion** and take-overs (e.g., in the financial sector);
- ☐ pervasive market penetration by quality enhancement (e.g., **consumer electronics**);
- ☐ 'back to **basics**' strategies with repulsion of other activities (e.g., **car industry**, **micro-electronics**);
- ☐ emphasis on quality and flexibility (**just in time** principles, temporary **contracts** for employees);

- developing national and international **strategic** alliances, in order to secure the indigenous **competitive** position;
- support for 'regional champions' which are able to conquer broader **markets**.

Thus, it is **clear** that ▪ in addition to conventional **roles** of regional policy addressing overhead investments (e.g., in the education sector or in **infrastructure**) ▪ indigenous regional entrepreneurial and administrative skills are necessary to put the region on an accelerated growth path. Networking **will** then turn out to be a critical factor for business attitude, while the region as a **whole** would have to build on information and communication **infrastructure** which would **encourage** the region to abandon **inertia** and to become a learning region in a Schumpeterian sense. This would **also** be of critical importance for the attraction of foreign capital to the area.

5. The Position of Border Regions

Border regions are not exceptions, but **rules** in the **political** geography of **many** areas in our world. For example, Europe has approximately 10.000 km. of land **frontier**, 60 percent of which consists of internal borders between EU members. Border regions located at two **sides** of the **frontier** between **nation** states have **often** big **differences** in language, culture and socio-economic conditions. Border **areas** are **often** typical examples of peripheral regions hampered in their development by their isolated position. **Such** regions had usually only an orientation towards the **central** areas of a country and ignored their back-to-back neighbours (cf. Gradus and Lithwick 1996).

In a document of the European Commission on 'Europe 2000; Outlook for the Development of the Community's Territory' (1991) the position of border **areas** is phrased as follows: "*Changing borders have been a feature of the Europe's political history, but most of the borders of the community have been in place for a century or more. Their experience has shaped the economic, social and cultural development of border regions and cities for even longer than that*" (p. 169). After the completion of the single European Market the **frontier** obstacles **will** mainly be removed, so that by then the border **areas** **will** assume a new position in the EU, as they represent both a potential impediment to and a **potential** model for the integrated development of the **economic** and physical **space** of the European territory. In the **latter** case new 'transborder' regions **may** emerge with a strong growth potential, given their transfrontier contact orientation.

The current regional **economic** profile of European **frontier** regions is far from favourable. They have **in general** a **poor economic performance** as a result of

- a **peripheral** location and an isolated position with respect to the **economic** and political heartland of their country
- a separation between the **economic** centres of a **frontier** region and their **natural** hinterland thus leading to a distortion in patterns of trade and service provision
- 3 a relatively poor **infrastructure** endowment because of their geographical location on extreme arteries of transport and communication networks
- (often) a poor natural resource endowment, a low agricultural productivity and a less developed **social** and business service provision
- **large differences** in **legal**, administrative and **social** welfare systems as well as in language and **cultural** traditions which altogether **hamper** communication and cooperation with regions **across** the border.

In **general**, the present EU border **areas** have a lower **income** level per capita and a **higher** unemployment **rate** than the other regions of their countries. It is evident that regions along the (disappearing) European **frontiers** will be strongly **affected** by the increasing integration of the Community. The degree to which they will be **influenced** depends on the question whether these regions **are internal** or **external** border **areas**.

Internal border regions will face three major **changes**:

- **economic integration effects** leading to an increase in cross-border trade and service flows and in international labour movement (cross-border **community**, e.g.)
- **transnational infrastructure investment** leading to an expansion of transportation networks, public utilities and services and new **economic** activity patterns
- **uniformity of legal and administrative procedures** leading to **closer** cooperation with neighbouring cross-border **areas** and to cross-border development initiatives.

External border **areas** will be facing major development bottlenecks, although the trade agreement with **many** countries outside the EU (e.g., the EFTA-countries and former COMECON countries) will alleviate their disadvantageous position. A major problem to be expected in these external border **areas** is the foreseeable flow of immigrants **from** non EU countries. At present, initiatives are developed by the EU to ensure a **sufficient** linkage of these **areas** to wider Community networks and to let them play a pivotal role in **economic** cooperation with adjacent non-EU countries.

Border **areas** **suffer** in **general** from a **lack** of interaction and communication, thus leading to high transaction and transportation **costs** for **economic** activities in these **areas**. An illustrative list of potential barriers to interaction is given in Table 1. Clearly, vanishing borders **also** lead to an opening up of regional **economies** to **many** new **economic** and **social** **influences**, which **may generate** an increased competition between these regions. **Thus**, a **fine-tuned** and tailor-made development strategy seems to be the best guarantee for a **reinforcement** of regional **potentials**.

In the past decade, two major strategies have been proposed - in addition to conventional regional development initiatives - to **assist** border regions in enhancing their competitiveness, viz. foreign investments through **free** enterprise zones and gateway strategies. Both will now concisely be **discussed**.

The attraction of foreign investments is **an** integral part of the industrialization policy in **many** border **areas**. In particular, **many** governments have been actively seeking to attract foreign investment in high **technology** activity to help their region move more quickly into more advanced industries (cf. Dicken 1992). One of the instruments of **such** a policy is the establishment of **free enterprise zones**, where exemption **from** certain kinds of legislation and special incentives apply. There is **however**, a large variation in the type of 'enclaves', **such as** **free** trade zones, export processing zones, **free** ports, etc. The establishment of zones for **free** enterprise is an instrument within a particular (**regional**) industrialization policy that a country pursues. On the **national** level, broadly speaking, three kinds of **industrialization strategy** can be distinguished:

- local processing of indigenous **raw** materials;
- import-substituting industrialization;
- export-oriented industrialization.

Table 1 Potential barriers to interaction

	Type of Barrier
A. Physical	Spatial distance Natural obstacle Congestion (overload) Lack of safety (criminality) Missing (small) links in traffic infrastructure
B. Economic-Political-Legal	
a. Unintended	High cost of network participation Monetary system Lack of convertibility of currency Legal system Unstable power structures
b. Intended	Political borders Trade borders and (fiscal) tariffs Market regulation Border customs formalities (waiting time) Property and ownership regimes Secrecy
C. Socio-Cultural	
a. Unintended	Small skills of actors to identify networks (mental map) Language and vocabulary disparities Educational and income disparities Cultural behaviour disparities Network inertia
b. Intended	Political and ideological protection Social group protection
D. Time	Peak and off-peak hours Divergent (global) time zones

Source: Van Geenhuizen and Nijkamp (1998)

The **success** of these strategies depends on a number of factors, **such** as the economy's resource endowment (**both** physical and **human**), its **size** (**particularly** of its domestic market) and the attitude of the national government. For example, not all 'transition **economies**' or developing countries possess a **natural** resource endowment which could enable the development of a local processing industry. And even those which have **such** an **asset** **may** experience severe **difficulty** in setting up a local industry: developed country's **tariffs** tend to be **higher** on **processed** than on unprocessed materials and, **when** multinational corporations are involved, it **may** be corporate policy to **locate** processing operations outside the **raw material** producing country.

It is noteworthy that the rise of the major Newly Industrialized Countries is only to a **very small** extent based on local materials processing. Neither Singapore nor Hong Kong had the **material** base to support **such** a strategy. But even in countries **such** as **Brazil**, industrialization has followed the pattern of initial emphasis on import **substitution**, eventually followed by a **shift** to export-oriented **policies**. Particularly one type of **free** enterprise zones is closely related to export-oriented **manufacturing policies** and the attraction of foreign investment, namely the export-processing zone. On the other hand, **freeports** and **free trade zones** **are often commercial** zones only. These various forms of zones will now be **discussed** more in detail.

Many developing countries have used **export-processing zones (EPZ)** as one of the instruments aimed at **stimulating** their export industries and attracting foreign investment. An EPZ is a **small** separated area within a country, with the purpose to attract export-oriented industries by offering them especially favourable investment and trade conditions compared with the **remainder** of the host country. In particular, an EPZ **provides** for the importation of goods to be used in the production of exports on a (**bonded**) **duty free** basis. EPZs are set up for actual **manufacturing**: the processing **and/or** assembly of export **products** from primarily **imported** materials and **components**.

EPZs **can** be seen as 'export enclaves' within which special concessions apply, including a package of incentives (for investment) and exemption **from** certain kinds of legislation. In addition, within **EPZs** all the physical **infrastructure** and services necessary for manufacturing are provided, **such** as roads, power supplies, and low **cost/rent** buildings. In various cases the restrictions on foreign ownership which apply in the country as a **whole**, are waived for foreign **companies** in the zone.

In developing countries, **EPZs** have been located **in a variety of environments**, **such** as incorporated in airports and seaports, or next to large cities. Others have been established in relatively underdeveloped **areas** as a part of a regional development strategy. With respect to **size**, EPZs vary enormously, ranging **from** extensive developments to a few small factories. They host employment ranging **from** more than 30,000 to little more than 100 workers. EPZs have been established in developing countries **primarily in recent years**. By the end of the 1980s, **Asia** **contained** approximately 60% of all EPZ employment in developing countries. Major examples are Hong Kong and Singapore, being **in fact entire free zones**, but with export-processing activities **concentrated** in various industrial estates. The other major concentrations are in Taiwan (80,000 employed in four **EPZs**), Malaysia (82,000 in **eleven** EPZs) and South Korea (140,000 in three EPZs).

In the United **Kingdom**, the view has developed that the path to a regaining of **economic** prosperity would lie in restricting government intervention in the market. In the early 1980s, there was a new need and hope that the **fruits** of market competition and **free** enterprise could

be enjoyed in this way. This goal was behind the establishment of a number of **enterprise zones and freeports** in the United Kingdom.

Enterprise zones and **freeports** can be seen as a departure from the 'interventionist' philosophy underlying traditional regional policy. Enterprise zones have initially been set up on an experimental basis for a ten year period. Firms located in **free enterprise zones** enjoy two different benefits:

- **tax concessions**, the most important being exemption from industrial and commercial rates, and also 100% allowances for **capital** expenditure on buildings;
- **simplified** planning procedures, aimed at reducing the gap between investment decisions and the construction of new plants, and **less bureaucratic impediments** such as access to quicker customs procedures.

Freeports are rather different. A **freeport** is an enclosed zone within or adjacent to a seaport or **airport** within which goods are treated for customs purposes as being **outside** of the customs territory of the country. Two benefits are enjoyed by the **firms** located in **freeports**. First, customs duties, levies and **value-added** tax payments are paid only **when** the goods leave the **freeport** for the rest of the United Kingdom or the European Community. Secondly, the **firms benefit** from **simplified** customs procedures.

After the above discussion of the characteristics of various types of FEZs, we now pay attention to their benefits. In **general**, the **effects** of instruments of regional economic policy are difficult to assess. For example, job creation and multipliers **can** only be observed where enterprise zones have been established, whereas it **remains** unknown what the outcomes in the regions would have been without those zones (zero-case). The discussion will focus therefore, on what has been realized in these zones, without an evaluation in terms of **success** or **failure**. With regard to export processing zones the following **can** be stated. The above indicated 'up-market' **shift** is **still** very small, which **means** that the type of manufacturing and labour force in these zones is **still quite** uniform throughout the world, **namely**:

- production of **textiles** and clothing and the assembly of **electronics**. Almost half of the labour force in the Asian export processing zones is engaged in **electronics** industry.
- a **dominance** of relatively low-skilled workers and a **dominance** of young female workers.

Regarding the experiences in the United Kingdom in enterprise zones, it **can** be stated that their value is somewhat in doubt. Investigation has revealed that the **majority** of the **firms** in these zones would have existed anyway, most of these in nearby locations.

In **general**, a **generic** policy of **free** enterprise zones for border **areas** is somewhat doubtful. It must be recognized that there is a **fierce** 'competition' throughout the world in attracting foreign direct investment, not only in the so-called 'transition-economies', but **also** in developing countries. In **such** a situation it is important that the **specific strong points** of a border region are made **clear**, particularly what **can** be offered to foreign investors in **general** and in relation to the instruments of **free** enterprise zones. At the same **time**, it is important to have a **clear** idea about the **type of economic activity** one wants to attract.

It **can** thus be concluded that **specific economic** zones which **provide** a combination of exemption on taxes **and** duty, use of technological knowledge, and 'deregulation', **may** likely offer good opportunities for the attraction of foreign direct investment towards border regions.

A **second** strategy to develop border **areas** is to **reconvert** them into **gateways** for

transportation and communication. Some regions have **successfully** adopted **such** a strategy (cf. Nijkamp and Rodenburg 1998).

The concept of a gateway is not always unambiguous and sometimes it is not clear what is meant by the term gateway. According to Webster's Third New International Dictionary a gateway is: "*a passage for navigation or travel as (1) any one of a limited number of points by which the traffic of a defined region can enter; (2) a point at which freight moving from one such region to another is interchanged* "

It is sometimes **claimed** that modern gateways **can** no longer be considered only as points but as **areas** as well, e.g. internationally **accessible** host **areas** for direct investment. As a **result**, an **enlarged** definition of gateway activities is required. This definition **may** cover (Gaebe and Schamp, 1994):

- ☐ new **forms** to organise the commodity flows and new forms to penetrate a hinterland;
- ☐ new ways of entering a region or market with direct investment;
- ☐ new flows attracted to the area at hand.

From the above mentioned views it **can** be derived that a gateway is an area that **may** cover regions of more than one country, through which the distribution of voluminous incoming and outgoing transport flows takes **place** by **means** of transfer and transshipment, and in which added **value** **can** be obtained by entering new **regions/markets** with the help of direct investments.

Clearly, the gateway concept is not entirely unambiguous and **still** creates confusion. It has even been suggested that the term should be replaced by a better, more **specific** and **descriptive** word. The gateway concept does not seem to be sufficiently multi-faceted enough to cover all **aspects** of bridging strategies which **relate** to gateway functions. On the other hand, the gateway concept is not **specific** enough to describe emerging dimensions of bridging strategies (Santalainen, 1995): gateway strategies tend to bring a range of **economic** benefits to **firms**, cities, regions or even countries. This is because public authorities **can**, for example, exploit the location, **traffic** and communication connections and **infrastructure**.

It should be added that timing plays a key role in developing **successful** gateway strategies. The correct timing of major **strategic** moves **such** as **huge** investments forms a critical **success** factor of a gateway strategy. It is **also** important that gateway strategies • especially those of an international **nature** • are developed by the highest possible authorities **such** as the government or key ministries. In this context, **strategic** gateways for border **areas** should in future public strategies be explored and addressed in greater detail than has been done in the past. One of these problems is, of course, the environmental and congestion burden of transit **traffic**, which **causes** increasingly high external **costs** which **may** reduce the **economic** benefits. Nevertheless, in addition to the natural resource potential of many border regions, it seems that gateway strategies **may** act as important anchor points for competitiveness strategies of border **areas**. **Also** here it is clear that new institutional modes of cooperation are **necessary** to ensure benefits to the border **areas** concerned.

References

- Armstrong, H. and J. Taylor, **Regional Economics and Policy**, Harvester/Wheatsheaf, London, 1993
- Axelsson, B. and G. Easton, **Industrial Networks; a New View of Reality**, Routledge, London, 1992
- Bruinsma, F.R., C. Gorter and P. Nijkamp, Nomadic Firms, Market Change and **Infrastructure**, Research Memorandum Dept of Spatial Economics, Free University, Amsterdam
- Buckley, P.J., Organisational Forms and Multinational Companies, **Internal Organisation, Efficiency and Profit** (S.Thompson and M. Wright, eds.), Philip Allan, Oxford, 1988, pp. 127-143
- Capello, R. **Spatial Economic Analysis of Telecommunications Network Externalities**, Avebury, Aldershot, 1994
- Davidson, P. **Netwerkvorming in de Vliegtuigindustrie**, Master's Thesis, Dept. of Economics, Free University Amsterdam, 1995
- Dicken, P., **Global Shift**, Paul Chapman, London, 1992
- Dunning, J.H., **Explaining International Production**, Unwin Hyman, London, 1988a
- Dunning, J.H., **Multinationals, Technology and Competitiveness**, Unwin Hyman, London, 1988b
- Durlauf, S.N., and P.A. Johnson, Multiple Regimes and Cross-Country Growth Behaviour, **Journal of Applied Econometrics**, vol. 10, 1995, pp. 365-384
- Gaebel, W., and E.W. Schamp, **Gateways to the European Market**, Lit Verlag, Hamburg, 1994
- Galor, O., Convergence? Inference from Theoretical Models, **Economic Journal**, vol. 106, 1996, pp. 1056-1069
- Geenhuizen, M.S. van Barriers to Technology Transfer, **Moving Frontiers** (J. Cuadrado Roura, P. Nijkamp and P. Salvo, eds.), Avebury, Aldershot, 1995, pp. 247-276
- Geenhuizen, M.S. van and P. Nijkamp, Potentials for East-West Integration: The Case of Foreign Direct Investment, **Environment & Planning C**, vol. 16, 1998, pp. 105-120
- Giersch, H. The Age of Schumpeter, **American Economic Review**, vol. 74, no. 2, 1984, pp. 103-109

Gradus, Y., and H. Lithwick (eds.), **Frontiers in Regional Development**, Rowman and Littlefield, London, 1996

Hakansson, H. (ed.), **Industrial Technological Development: A Network Approach**, Croom Helm, Andover, Hants, 1987

Hinterhuber, H.H. and B.M. Levin, **Strategic Networks: the Organisation of the Future**, **Long Range Planning**, June 1994, pp. 43-58

Johansson, J. and L.G. Mattsson, **Strategic Adaption of Firms to the European Single Market • a Network Approach**, **Corporate and Industry Strategies for Europe: Adaptions to the European Single Market in a Global Industrial Environment** (L.G. Mattsson and B. Szymme, eds.), Elsevier, Amsterdam, 1991, pp. 263-281

Kamann, D.J., and P. Nijkamp, Technogenesis, **Technological Forecasting and Social Change**, vol. 39, 1991, pp. 35-46

Klundert, Th. van de, **Over Economische Groei en de Convergentie van Landen**, **Mededelingen KNAW**, Amsterdam 1998

Kohno, H., Nijkamp, P. and J. Poot (eds.), **Regional Development and Competition in the Age of Globalization**, Edward Elgar, Cheltenham, UK, 1998 (forthcoming)

Legendijk, A., **The Internationalisation of the Spanish Automobile Industry and Its Regional Impacts**, Thesis Publishers, Amsterdam, 1993

Legendijk, A. and G.A. van der Knaap, Foreign Involvement in the Spanish Automobile Industry, **Environment & Planning A**, vol. 25, 1993, pp. 1663-1676

Levine, R., and R. Renelt, A Sensitivity Analysis of Cross-Country Growth Regression **American Economic Review**, vol. 82, 1992, pp. 942-963

Nijkamp, P. and C. Rodenburg, Mainports and Gateways in Europe, Research Memorandum Dept. of Economics, Free University, Amsterdam, 1998

Nijkamp, P. and N. Vermond, Scenarios on Opportunities and Impediments in the Asian Pacific Rim, **Studies in Regional Science**, 1996, pp. 1-46

Nijkamp, P., European Regional Development Policy and Foreign Direct Investments, Research Memorandum Dept. of Economics, Free University, Amsterdam 1998

Pfeffer, J. and G.R. Salancik, **The External Control of Organizations: A Resource Dependence Perspective**, Harper & Row, New York 1978

Porter, M.E. **The Competitive Advantage of Nations**, MacMillan, London, 1991

Ratti, R., and S. Reichman, Spatial Effects of Borders, **Europe on the Move** (P. Nijkamp,

ed.), Avebury, Aldershot, 1993, pp. 115-138

Quah, D., Twin Peaks: Growth and Convergence in Models of Distribution Dynamics, **Economic Journal**, vol. 106, 1996, pp. 1045-1055

Sachs, J., The Limits of Convergence. Nature, Nurture and Growth, **The Economist**, 14 July 1997, pp. 69-72

Santalainen, T., Gateways as a Process Creating Value-Adding Gateway Hubs and Spokes, Ministry of Trade and Industry, Finland, Studies and Reports 91/1995

Thorelli, H.B., Networks: Between Markets and Hierarchies, **Strategic Management Journal**, vol. 7, 1986, pp. 37-51

Williamson, O.E., **Markets and Hierarchies, Analysis and Antitrust Implications**, Free Press, New York, 1979